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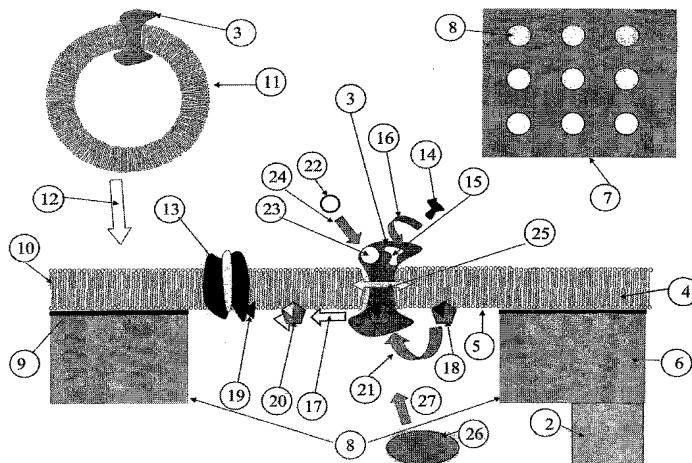
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(54) Title: AN ASSAY CHIP, AND USES OF SAID ASSAY CHIP TO DETERMINE MOLECULAR STRUCTURES AND FUNCTIONS



(57) **Abstract:** An assay chip (2) for investigation the functionality of membrane proteins and their interactions with molecules, comprising: a nanopore array (7) having a plurality of nanopores (8) in a suitable support layer (6) deposited on said nanopore substrate (28) being a substantially planar support layer (6) having a plurality of nanopores (8) corresponding with said nanopores of said nanopore substrate (28); a biological effective layer (4) being capable to host at least a non-lipid molecule or functional molecule, deposited on said support layer (6) and covering the plurality of nanopores (8), resulting in accessible nanopores from both sides of the biological effective layer (4) for measurement or imaging. The invention provides a structured support that allows to generate a biological effective membrane, such as a lipid bilayer membrane, having high and reliable stability in a manner that its fluidity is sustained in order to keep integrated membrane proteins in said lipid bilayer in its full biological functionality.

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